A.A.A.S. BULLETIN

VOL. 3 JUNE, 1944 No. 6

Published monthly by the American Association for the Advancement of Science. Office of Publication, North Queen St. and McGovern Ave., Lancaster, Pa. Editorial and Business Office, Smithsonian Institution Building, Washington 25, D. C., to which office all communications should be addressed.

Edited by F. R. Moulton and Sam Woodley.
Single copy, 10 cents; annual subscription, $1.00.

Entered as second-class matter at Lancaster, Pa., March 24, 1942, under the Act of August 24, 1912.

The Middle Man

In these days of high prices, when the housewife reads that beef is worth from 10 to 17 cents a pound on the hoof but costs her from 30 to 70 cents a pound at the meat shop, she is likely to complain that Middle Man is robbing her. To her Middle Man is a monster that the Government ought to abolish. Of course, this particular middle man is only one of the many that stand between raw materials and consumers, but he will serve as an object on which to focus attention while an important point is being made.

Between the farmer and the consumer of meat there are essentially two middle men (using the term to represent any one between raw materials and consumers), the packer and the retail store. Since the former is by far the larger, he will be considered. The largest meat packer in the world is Swift & Company, with headquarters at Chicago. Its total sales in 1943 amounted to more than $1,490,000,000, or an average of more than $4,000,000 a day, including Sundays and holidays, or by weight perhaps three-quarters of a million pounds per hour.

However, Swift & Company have many expenses to meet. On the average, out of every dollar received from its sales in 1943, 77.7 cents went to growers of live stock. Few persons object to what farmers receive for their products. An additional 10.3 cents went as pay to the 72,000 employees of the company, of whom over 14,000 were women. In general, there is no objection to what employees receive for their labor. These two items account for 88 cents out of the dollar received by the company from the sale of meat and meat products. The next largest item of expense was 4.1 cents for manufactured supplies necessary in the business of the company. Then follow 3.8 cents for railway transportation, trucking, rent, etc. Finally, taxes took 2.4 cents out of the consumer's dollar, leaving about 0.6 cent for dividends to stockholders and a little less than 0.6 cent for use in improving the business. The accounting procedures and controls of these great companies are so exacting that there can be no question of the correctness of the figures that have been quoted. The results are generally similar for the operations of the large retail purveyors of food products and need not be discussed.

It may be noted, parenthetically, that the 77.7 cents Swift & Company paid growers of live stock and the costs of transportation, supplies, etc., can also be broken down into compensation for labor, taxes, and return on capital investment. What the consumer pays can be traced back ultimately to these primary elements, and of course such analyses have often been made. Since the "laborer is worthy of his hire," the rapacious middle man must, therefore, consist of taxes or returns on capital investment or both. The subject of taxes is now attracting so much attention everywhere that only the part of the consumer's dollar taken by capital need be considered here.

In order to illustrate what the distribution of the earnings of large companies generally means, the operations of General Motors Corporation for 1943 will be used. It presents very great details of its business in its reports. The sales of this company in 1943 amounted to almost $3,800,000,000, most of which consisted of war materials; at the close of the year deliveries were at the rate of more than $12,000,000 per day, about 40% of which was for aviation products. In the case of this company, about 2.3 cents out of each dollar of sales went as dividends to the holders of common stock, and about 1.4 cents was put back into the business. At the same time the company paid and made provision for taxes on the year's business to a total of almost 249 million dollars, which amounted to more than 6.5 cents out of each dollar, or nearly three times as much as was paid to stockholders.

The dividends paid to holders of common stock during 1943 amounted to $87,100,000, a considerable sum even in these days of tens of billions. Who was the middle man who received this princely sum? The middle man was 422,000 stockholders, in number falling only a little below the 449,000 employees of the company. There are owners of the common stock of this company in every state in the Union, and in about 70 foreign countries. More than half of the 422,000 stockholders are women, including many who have invested their savings and life insurance in the stock of the company. Nearly 10% of the capital stock of the company is held by approximately 28,000 estates and trusts which have invested in the company what are essentially trust funds. Of the 422,000 stockholders, approximately 337,000 of them, or almost 80%, own fewer than 50 shares each, and about 158,000 own not more than 10 shares. No individual owns as much as one percent of the voting stock of General Motors Corporation, and with one exception the individual owner of the largest number of shares is a scientist who has been a fellow of the Association since 1930. The Dupont Company, however, has as an investment a large block of stock of General Motors Corporation. The dividends it receives from this investment are distributed, in turn, to its own stockholders.

There are two principal lessons to be learned from the organization and operations of such great corporations as Swift & Company and General Motors Corporation. One is their amazing efficiency in production; the other is the opportunities they present to persons of small means to invest in the active life of their country. These are not accidental developments and opportunities. The way for them has been prepared by scientists, and then other men of comparable ability and correspondingly high ideals have organized science and technology for producing the things the world desires. Industrialists, as well as scientists, are trustees for the future of mankind, and a very large percentage of them feel as keenly their responsibilities to their fellow men.

There is a story of a pioneer who found tracks in a forest that he thought were the footprints of an Indian. On following them he eventually arrived at his own door because he had been tracking himself. In our pursuit of the middle man, who we may think has been robbing us, we have followed a trail that has led back to ourselves. In a real sense, every one of us is a middle man between the raw materials of the earth and those who consume the finished products. Every one of us is also a consumer who would perish if it were not for myriads of other middle men who stand between us and the soil, and the mines, and the forests, and the sea from which our sustenance is derived.

The middle man does not work as an isolated individual, but he must be a unit in a great army of workers. This army consists not only of privates but also of officers of all ranks who make of it an effective organization and direct its activities. An industrial army does not work for itself alone, but it must cooperate with other industrial armies, and it must exist for the benefit of the whole. As in all human relations, it must have freedom in order to be daring and efficient, and it must be inspired by a deep sense of responsibility to society in order to be worthy of survival. The degree of cooperation that is found among industrial companies is illustrated by the fact that General Motors Corporation in 1943 had contracts with nearly 19,000 subcontractors and suppliers of materials in its war production programs. And at the delivery end of its operations, it cooperated with the Army and Navy by training more than 38,000 soldiers and sailors for repair and maintenance work on its products that they use.

Industrial armies require great resources, as do those who fight on battle fields. In industry resources are measured in dollars, but they actually consist of lands and raw materials and buildings and machinery. They consist also of plans and organization and trained personnel. The resources of industry are acquired by funds supplied by the middle men in various ways, directly and indirectly—by payments for stocks and bonds, and by loans from money they have deposited in banks or paid on their life insurance policies. The scale of these operations is beyond comprehension. At the close of 1941 more than 40 million life insurance policies were in effect in the United States, secured by more than 32 billion dollars in assets of the insuring companies. Hence millions of members of the army of middle men holding these insurance policies have indirect interests in the railroads and industries of this country; and, reciprocally, the railroads and industries have responsibilities to the millions of insured.

In a sense scientists are responsible for the appalling complexities in human relations that have developed within a few generations. They have made it possible to weave the threads that now essentially tie every individual to every other individual in the world. There is no way

these ties can ever be broken and isolation can never return. Consequently scientists and educators and industrialists and statesmen and public servants and all others who toil with brains or hands must learn the lesson from both war and industry that only through high purpose and honest cooperation can worthy goals be achieved. If this lesson is not learned, then the desolation and misery that one darkly brooding spirit has caused to be heaped on Europe will inevitably be spread over all the world.—F.R.M.

"Academic Freedom"

In earlier comments on the "editorials" that from time to time appear in the A.A.A.S. BULLETIN, it was stated that "Their purpose is to be suggestive and stimulating, rather than exhaustive and pedantic." The purpose appears to have been realized in the eight brief paragraphs on "Academic Freedom" published in the May issue of the BULLETIN. The comments range from unqualified approval to almost unqualified disapproval. It is regretted that they cannot be printed in full and analyzed for the purpose of deriving from them many interesting conclusions.

Perhaps the most certain conclusion from the letters received is that the phrase "academic freedom" has no very definite meaning and perhaps no meaning whatever. Or the difficulty may be that the article was not clearly written, as is suggested by the fact that one correspondent asked for an explanation of it. Or it may be that scientists, like other people, have prejudices that color their thoughts on every subject except possibly those in which they are experts. There can be no reasonable objections to differences of opinion on any subject, and tolerance of the views of others is a virtue worthy of universal approval. As a matter of fact, most of the few writers who dissented from the views presented in the editorial, or what they thought were the views of the writer, expressed themselves with admirable fairness.

One of the most appreciated letters was received from a corporal in our armed forces stationed in Pennsylvania. He emphasizes the rights of men in service, and states emphatically they expect to receive them. Although soldiers and sailors fight for themselves and their descendents as well as for those who remain at home, nearly every person in the United States will agree with those statements, and the history of this country is a record of generosity to its soldiers and sailors never approached anywhere else in the world. World War I ended less than 26 years ago, yet the total post-war benefits to men serving in that war, and to their families, have amounted to an average of about $3000 for each enlisted man, or a total of about 14 billion dollars. As great as that sum is, it probably will be exceeded many times during the first 26 years after the close of the present war, partly because there will be three times as many men and women to provide for and partly because of the present higher scale of such payments. It can hardly be expected, unless this country goes bankrupt, that before the last survivor of this war and the last pensionable dependant has died, the direct cost to the Government will exceed 100 billion dollars.

No criticism was made in more positive terms than that of a young philosopher, the second paragraph of whose letter is as follows:

> The real purpose of your article seems to be to object to possible support of education by the federal government. You seem to speak as if the "Government" were some foreign monstrous evil power. The government is *our* government. We scientists are citizens, not vassals. If we look upon our government as something opposed to us, we will seek to fight it, frustrate it, instead of using it to serve our ends. I consider your expression a form of sabotage against healthy political morale. Scientists, as citizens, need to help make constructive use of opportunities for promoting education and research which might be made possible through federal funds. The dangers of bureaucracy need to be fought, not by fear and fruitless offense, but by "eternal vigilance," as you say, of the conduct of public offices. This attitude of fighting against our government is a symptom of political inferiority complexes among scientists.

I trust that my hope that American colleges will not endanger their independence by seeking indirect subventions from the Federal Government falls appreciably short of treason. There is considerable historical evidence on this particular phase of academic freedom, including the recent history of Germany, that would be relevant and interesting.

The following paragraph from a professor in the University of Georgia who has long been a fellow of the Association presents a very real problem that cannot be ignored:

> There are regional differences in wealth which necessitate Federal participation in the new educational program. In the south we have almost no capital endowment and little tax money though a comparatively large part of what we have goes to education. We have many youngsters, however and our resources are stretched to the limit in educating them. Very soon we will be faced with the job of educating two academic generations at once. Shall we turn away the veterans who have postponed their education, shall we stop the opportunity for those who come on in the first post war years or shall we enlarge our facilities to take care of both groups? The latter is our only decent answer but where is the money

coming from? If from tuition God help the student particularly the poor man's son. If from local capital and taxes, God help the south: Federal money is absolutely necessary.

Although there is a measure of truth in every one of the foregoing statements, cold statistics prove that conditions are not worse than they were when the brave parents and grandparents of the present generation were establishing colleges in Georgia, as well as elsewhere in our country. According to Federal statistics, the average per capita value of property in Georgia in 1900 was $422. By 1922 it had risen to $1,306, a three-fold increase in 22 years, just before the rapid increase in wealth in the South began. (More recent statistics for this particular item are not at hand.) In 1941, 566,000 motor cars were licensed in Georgia. The mere licenses for operating them cost the citizens of the State $2,300,000, and licenses and gasoline taxes together amounted to $26,000,000. Of course, these were a small percentage of the total cost of operating 566,000 cars. At the low average of $400 per year for depreciation, operation, repairs, and interest on investment, the total cost to the citizens of the State in 1941 for operating automobiles was more than 224 million dollars, an appreciable fraction of which may fairly be classed as mere luxury. Even one per cent of this sum would provide $500 a year for 4,480 ex soldiers and sailors. If the citizens of Georgia cannot educate their own sons and daughters without calling on Washington for aid, what other country in all the world can provide education for its children? Is not the trouble simply that throughout the country we are becoming soft and unwilling to forego current luxuries (motion pictures, cosmetics, joy riding) for such hard realities as education? Many hundreds who read this question can give it an affirmative answer from their own experience and observation. They won their own way through college in the more distressing days of the nineties and the first decade of this century, and they have since been among our most virile and successful citizens.

Lest it be concluded that more than a small fraction of the comments on "Academic Freedom" were adverse in character, extracts from two or three of the opposite kind will be presented:

I cannot resist sending a letter to congratulate you on the fine editorial in the May A.A.A.S. Bulletin.

I could make excellent use of half a dozen copies of the . . . May A.A.A.S. Bulletin. Specifically I wish to refer your most excellent editorial, "Academic Freedom," to some of our trustees and members of the Budget Commission.

Permit me to congratulate you for your fine article on Academic Freedom in the May A.A.A.S. Bulletin.

Among the mass of literature, periodicals, pamphlets, reports, and what have you that pile on one's desk and in which one vainly digs for gems, the lead article in the A.A.A.S. Bulletin is pure joy.

The foregoing samples of comments, both pro and con, by eminent scientists on problems of current importance should be taken as evidence of the deep interest there is in the future of our education, our freedom, and our civilization. Let us be tolerant of the differences in emphasis we place on details, and strive unitedly to the limits of our ability and strength to make a better future.—F.R.M.

Four-College Genetics Conference

American intercollegiate relations have been mostly competitive in character because they have consisted largely of athletic contests. Although loyalties to "Old Siwash" may often have been carried to extremes, intercollegiate rivalries have not been seriously objectionable. Nevertheless intercollegiate relations that are cooperative in character are desirable, particularly if they are concerned with things for which the institutions were primarily established.

The Four-College Genetics Conference, under the joint auspices of Amherst College, Massachusetts State College, Mount Holyoke College and Smith College, is an exceptionally interesting and important example of cooperation among neighboring colleges. These four institutions are within a few miles of the Smith College Genetics Experiment Station, of which Dr. Albert F. Blakeslee, president of the Association in 1941, is director. The conferences are enriched not only by participants from four institutions but also by the great variety of biological subjects which have a common meeting ground in genetics. As Dr. Blakeslee has said, there is nothing in biology which does not have a genetical aspect.

Ordinarily discussions at the conferences are led by members of the staffs of the participating institutions and by invited speakers. But the final program this year consisted entirely of papers presented by graduate students of the four institutions: Mary Sanders, Susanne McLean, Charlotte Pratt, Miriam Lee and Louise Potter, of Smith College; Gladys Mateyko, of Mount Holyoke College, Mary Berry and Leonide Goldstein, of Amherst College; and E. J. Thornton of Massachusetts State College. The subjects discussed ranged from responses of tomato plants to applications of colchicine to a comparison of the amounts of thiamin synthesized by different

strains of *Escherichia coli*. The particular subjects, however, are not of as great general interest as the admirable method of advancing science that is illustrated by these cooperative programs.

The July Scientific Monthly

With the July issue *The Scientific Monthly* will begin its 59th volume. This number contains nine principal articles, four of which are illustrated, a section of current articles on scientific advances, book reviews, and various comments and criticisms.

The first article is by Major General James A. Code, Jr., on the applications of science to Signal Corps problems of the Army. Although most applications of science to war must remain secret, yet General Code presents an astonishing picture of what is being done. In the second article, Dr. Edward J. Stieglitz concludes his discussion of senescence and industrial efficiency. In an article on the unity of science in education, a teacher of English presents a penetrating analysis of a question of the highest importance both to scientists and to educators in general.

The first of the illustrated articles is on five little known but useful exotic trees of southern Florida. The second describes the establishment of a school of agriculture in Honduras that promises to have an influence of the first order of importance on the life and economy of the Central American countries. The third, written by a distinguished Chinese scholar, is on the uses of seaweeds as human food and for other purposes. The last of the illustrated articles is on proteins as the essential structural units of which living organisms are made.

Then follow two thought-provoking articles, one on the physical characters of the American Negro and the other on interdependence in plant and animal evolution.

Contents

Science in Signal Corps Development ..... J. A. CODE, JR.
Senescence and Industrial Efficiency. II. ..... EDWARD J. STIEGLITZ
The Unity of Science in Education ..... C. I. GLICKSBERG
Trees of South Florida. I. ..... JOHN C. GIFFORD
School of Pan American Agriculture ..... C. M. WILSON
Utilization of Seaweeds ..... C. K. TSENG
Proteins: The Machines of Life ..... M. F. PERUTZ
Physical Characters of the American Negro. ..... M. F. ASHLEY MONTAGU
Interdependence in Plant and Animal Evolution. ALFRED GUNDERSON AND GEORGE T. HASTINGS
Science on the March
Book Reviews
Comments and Criticisms
Meet the Authors

Back Numbers of Journals Are Needed

In order to save paper, the printings of *Science* and *The Scientific Monthly* during the past few months have been made as low as seemed safe. As far as *Science* is concerned, there are on hand sufficient numbers of each issue from January 1 to June 1 of this year to supply all prospective demands for extra copies and back numbers for new members of the Association. In the case of *The Scientific Monthly*, however, the situation is quite different.

At present there are demands for copies of *The Scientific Monthly* for each month from January to April, 1944, inclusive, that cannot be met because the printings have been exhausted. One reason for the deficiency is that a number of articles were of such great current interest that there was an exceptionally large demand for individual copies. Another reason for the deficiency is that there have been more new members than was expected who have desired back copies from the beginning of the year in order to have volume 58 complete. The number of copies printed cannot be increased because the amount of paper being used is as high as the quota established by the War Production Board will permit. One of the reasons for the present shortage is that the quota is based on the amount of paper used in 1942 when the number of subscribers for *The Scientific Monthly* was much smaller than it is at present.

Apparently the only way to obtain back numbers of *The Scientific Monthly* that cannot be supplied from exhausted stocks is to ask for donations of them from members who do not expect to preserve them permanently. Consequently, if members who do not wish to keep their back copies of *The Scientific Monthly* for January to April, 1944, inclusive, and have no plans of disposing of them otherwise will send them to the Office of the Permanent Secretary, the Smithsonian Institution Building, Washington 25, D. C., the favor will be greatly appreciated. The package in which they are sent should have clearly on it the name and address of the sender so that he can be reimbursed for the expense incurred.

Although as yet there is no shortage of back numbers of *Science* for this year, additional copies of the issues for January 1, 8, 22, 29 and February 19 of last year (1943) are very much desired. They should be sent to the address above, and the senders will be reimbursed for the expense incurred in mailing them. By this procedure all correspondence may be avoided.

Hotel Accommodations—Cleveland Meeting

Plans have been made to have a central agency to handle requests for room accommodations for those attending the Cleveland meeting. This plan has been used successfully for meetings and conventions at which there have been large numbers in attendance. Such a plan is especially desirable during the war period because the hotels in large cities are experiencing great difficulty in meeting demands for accommodations.

The Cleveland Convention Bureau will serve the Association in administering the central agency. When writing for accommodations, five items of information should be given: (1) the writer is attending the meeting of the A.A.A.S.; (2) three choices of hotels; (3) price of room desired; (4) time of arrival, and, if possible, (5) time of departure. A list of hotels and rates, as well as section and society headquarters, was published in the May issue of the BULLETIN.

Requests for accommodations are quite likely to receive prompt and favorable attention if they call for double occupancy. Members of the Association and of the societies meeting with it are urged to forego the pleasure and convenience of single occupancy and arrange to "double-up." It is advisable to send your reservation as soon as possible.

The address of the Cleveland Convention Bureau is 1604 Terminal Building, Cleveland 13, Ohio.

Nonmember and Special Subscriptions

Each member of the Association receives free with his membership a subscription for the A.A.A.S. BULLETIN and for either *Science* or *The Scientific Monthly*. These are known as regular member subscriptions, which are a large percentage of the subscriptions for the Association's journals.

Libraries and the general public have the privilege of subscribing also for these journals, the subscription rates for the BULLETIN, *Science*, and *The Scientific Monthly* being, respectively, $1, $6, and $5 per year. These are known as nonmember subscriptions.

A member who receives either *Science* or *The Scientific Monthly* with his membership may subscribe for the other of the two journals at the special member rate of $3 per year. This special rate privilege, however, is not available for more than one copy per month of the second journal. These special subscriptions by members for second journals at reduced rates are known as "special subscriptions." The privilege of subscribing for a second journal at the special rate of $3 per year was first extended to members in 1932. When the plan was first adopted there were many special subscriptions for a year, after which the number declined sharply but has recovered and risen to new levels in recent years. The record of special subscriptions for 1932, 1934, 1939, 1943, and 1944 is as follows:

Special Subscriptions (May 30, 1944)

Year	Science	The Scientific Monthly
1932	264	777
1934	174	505
1939	182	703
1943	246	837
1944	353	1117

There were about 2,300 nonmember subscriptions for *Science* on May 1 and 2,176 nonmember subscriptions for *The Scientific Monthly*. It is not expected that these numbers will greatly increase because libraries and research laboratories have the privilege of becoming "institution members" of the Association.

The Association Membership

In February the membership of the Association for the first time passed 25,000, a net gain of 700 during a year of war in which thousands of scientists were in service and all of them had exceptional financial burdens. The pleasure at this substantial increase is tempered somewhat by the steadily increasing difficulty in supplying the Association's journals to its members while keeping within the quota for paper set by the War Production Board.

The Association was organized in 1848 with an initial membership of 461. By 1858 it had increased to 962, but in the following decade it declined to 686. The membership of the Association increased by only 225 in the first twenty years of its existence, and substantial increases did not begin until nearly a decade later. In 1879 the membership of the Association exceeded a thousand and has never since fallen below that level. Twenty-one years were required for as great an increase in the membership of the Association as there was from February 25, 1943, to February 25, 1944. During the twenty years from 1881 to 1900 the Association's membership averaged almost exactly 1,900.

Beginning with 1901 when *Science* became the official journal of the Association its membership increased rapidly, exceeding 8,000 in 1911 and rising to 11,442 in 1920, when Dr. Burton E. Livingston became Permanent Secretary. The

number of members of the Association increased during the decade in which Dr. Livingston was Permanent Secretary by nearly 7,500, attaining 19,059 in 1930. During the severe depression years it declined to 18,242 in 1936, since which it has steadily risen to its present level, each year increasing more than it did in the first twenty-one years after the Association was founded. On May 30 the Association membership stood at 25,534.

Dimensions of Our Galaxy

A recent lecture by Dr. Harlow Shapley, director of the Harvard College Observatory, reminds us that even under the stress of war there are many persons who find pleasure in contemplating things far removed from this earth and human troubles.

Until recent decades nearly everybody was familiar with the hazy band of light, the Milky Way, that on clear nights at certain seasons of the year may be seen stretching diagonally across the overhead sky. It is clearly composed partly of relatively faint stars, but there is also a general background of light that with the unaided eye cannot be resolved into individual points. With the invention and use of the telescope a little more than 300 years ago it became evident that the milky way is composed mostly of faint stars. The natural conclusion was that these stars are actually small bodies, though from time to time it was suggested that their faintness might be a result of their great distances from the solar system. About a century ago it was found that the nearest star is at a distance of about 25 million million miles, or the distance light travels in four years.

On the whole, our milky way system, or galaxy, is a rather flattened disc of stars, whose major diameter is roughly 100,000 light years, with a thickness about one-tenth as great. The solar system is near the central plane of our galaxy and about 30,000 light years from its center. The number of stars in our system of sufficient mass and density to be strongly self luminous is of the order of 50 to 100 billions. This vast mass of stars is rotating about its transverse axis, not as a solid but with irregular interior motions, and in a general period of something like 100 million years.

The foregoing facts have been known in a general way for a decade or two, but Dr. Shapley from his studies of globular clusters of stars has proved the existence of an enveloping sphere of widely scattered stars having a diameter of about 100,000 light years. That is, the milky way is a dense (in the astronomical sense) disc, or wheel, of stars immersed centrally in an enormous spherical stellar haze. Incidentally, the globular clusters have been found to be vast, nearly spherical aggregations of tens of thousands of stars, many of which are enormously more luminous than the sun. One of the most interesting problems of celestial dynamics is the origin and evolution of these systems, both as a scientific puzzle and for the stern warning they give against any speculations of a short life time, even in the astronomical sense, for the stars.

A Congressman once said during a period of national depression and general anxiety that what this country needs most is a good five cent cigar. Astronomers might paraphrase the Congressman's remark by saying that what the world now needs most is a flaming comet extending half way across the sky.

American Society of Parasitologists

The American Society of Parasitologists was organized in Washington, D. C., on December 30, 1924, along lines laid down by a committee consisting of R. W. Hegner, *Chairman,* E. B. Craw, *Secretary,* W. W. Cort, and B. H. Ransom from the Helminthological Society of Washington The object of the Society is "to serve as an association of workers in the field of parasitology for the presentation and discussion of new and important facts and problems in that science and for the adoption of such measures as shall tend to the advancement of parasitological teaching and investigation in this country."

The Society has four classes of members: active, life, foreign and honorary. Any person interested in parasitology is eligible for election to active membership, this election depending on the favorable vote of the Society's Council. The annual dues are $4. Foreign scientists who had made outstanding contributions in the field were eligible for election to honorary membership.

The first officers of the Society were *President,* H. B. Ward; *Vice-President,* S. T. Darling; *Secretary and Treasurer,* W. W. Cort; and *Council Members at Large,* P. S. Bartsch, F. C. Bishopp, R. W. Hegner, C. A. Kofoid, B. H. Ransom, W. A. Riley, C. W. Stiles, and E. E. Tyzzer.

The first annual meeting was held in Kansas City, Mo., December 29 to 31, 1925, in affiliation with the A.A.A.S. Thirty-eight papers were presented at this meeting. The Society has continued to meet with the A.A.A.S. each year until 1942 when, at the suggestion of the Office of Defense Transportation, the meeting was postponed indefinitely because of war conditions. The number of papers presented has steadily increased until at the Philadelphia meeting in 1940, 91 papers were offered, these representing all phases of parasitology. Several other recent years have seen

almost this number of papers given, and even in 1942 no fewer than 65 were included on the program which was postponed. A regular feature of the annual meeting has been the Society's luncheon followed by the general business meeting where members are fully informed of the past actions of the officers and have opportunity to make suggestions for the approaching year.

From its beginning, the Society has been interested in acquiring a journal in which the business of the Society could be properly recorded, and where the programs of meeting could be announced and the abstracts of papers printed. This hope was realized in 1932 when, on June 15, Henry B. Ward, its first President, presented to the Society the *Journal of Parasitology* which he had founded. The Society appointed, as its first editorial committee, W. W. Cort (Chairman), R. W. Hegner, and F. M. Root. The *Journal* has continued, in the years since, to serve as the official organ of the Society The high standards which were set during the many years of Dr. Ward's management have been maintained by the editorial committees which have guided the *Journal* since the Society acquired it. The *Journal* is now in its 29th volume.

On September 22, 1932, the Society received its Certificate of Incorporation in the District of Columbia, following action by a committee consisting of M. C. Hall (Chairman), B. Schwartz, and E. W. Price.

The Society has grown steadily since its founding and its members today include representatives of all aspects of parasitology. Altogether 1,136 persons have been elected to membership since the Society was organized. The last published membership list (December, 1942) included the names of 534 persons, 463 of this number residing within, and 71 residing outside, continental United States. Three hundred and twenty-one persons were elected as charter members before January 1, 1926, and, of these, 115 are still active members of the Society.

World War II has had rather direct effects upon the Society. Meetings have necessarily been postponed and little organized effort has, therefore, been possible. Yet, because much of the war is being carried on in the tropics, where parasites have their greatest importance as causes of human disease, the members of the Society have had an almost unique opportunity through their specialized training and experience to contribute generously to the war effort. Many members have offered their aid to the Government by enlistment in the services and are now helping in the diagnosis, treatment, and control of parasitic diseases in base or field hospitals in all parts of the world. Others are engaged in training, in parasitology, special groups of carefully selected Army or Naval medical officers whose earlier professional courses did not offer enough parasitological experience for the present potential needs. Still others are working in research programs on parasitic disease the fruits of which will help to improve the lot of mankind for all time to come. The Society is proud that its members have been able to respond so well in the present emergency.—J. T. CULBERTSON, *Secretary.*

Membership in the Association

Eligibility for Membership

Membership in the Association is open to all persons engaged in scientific work, whether in the fields of the natural or the social sciences; to all amateur scientists, whatever their special interests; and to all who desire to follow the advances of science and its effects upon civilization. Members having made substantial contributions to the advancement of science are eligible for election as fellows.

Dues and Publications

Membership dues are $5 per year, including subscriptions for the monthly A.A.A.S. BULLETIN and either the weekly journal *Science,* now in its 99th volume, or *The Scientific Monthly,* now in its 58th volume. *Science* is a journal for professional scientists; the *Monthly* is a nontechnical journal for the intelligent public. The Association also publishes technical symposia and nontechnical books on science that are available for members at prices substantially below those to the public.

Organization and Meetings

The Association was founded in 1848, with an initial membership of 461. Papers in its early programs were classified as either natural philosophy or natural history. Now its work is organized under 16 sections and 189 associated societies having a total membership of over 500,000. Its annual meetings are the greatest regular gatherings of scientists in the world.

Nominations and Applications for Membership

Members may submit nominations for membership at any time, and persons desiring to become members can obtain membership application forms from the Office of the Permanent Secretary, the Smithsonian Institution Building, Washington 25, D. C.

Changes of Address

New addresses for the Association's record and for mailing the journals *Science* and *The Scientific Monthly,* as well as the A.A.A.S. BULLETIN, should be in the Office of the Permanent Secretary, Washington 25, D. C., at least two weeks in advance of the date when the change is to become effective.

Officers of the Association

President, Anton J. Carlson; *Permanent Secretary,* F. R. Moulton; *General Secretary,* Otis W. Caldwell; *Treasurer,* W. E. Wrather; *Director of Publications,* F. L. Campbell; *Assistant Secretary,* Sam Woodley.

Executive Committee: Burton E. Livingston, *Chairman;* Roger Adams, Joseph W. Barker, Otis W. Caldwell, Walter B. Cannon, Anton J. Carlson, Arthur H. Compton, Kirtley F. Mather, F. R. Moulton, Elvin C. Stakman, and W. E. Wrather.